Content and Implementation of The Author's Methodology Aimed at Developing Reflexive Competencies in Future Doctors

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Abstract: This article examines the methodological foundations for developing reflective competencies in future physicians within the context of modern medical education. Reflection is conceptualized as a key mechanism for the conscious analysis of professional activity, critical evaluation, and continuous professional development. The methodological system developed by the author is presented as a comprehensive model that integrates reflective analysis, simulation-based learning, pedagogical and psychological approaches, and self-assessment components. The research findings demonstrate the effectiveness of practical tools—such as reflective journals, portfolios, video analysis, mentoring, and guiding questions—in enhancing future physicians' professional thinking, decision-making skills, and sense of responsibility. This methodological approach contributes to harmonizing theory and practice in medical education through the mechanism of reflection.

Keywords: Reflection, reflective competence, medical education, simulation, metacognition, clinical thinking, mentoring, portfolio, self-assessment, professional development, empathy, critical thinking, practical competence.

Introduction: The training of future physicians in modern medical education requires not only the acquisition of theoretical knowledge and practical skills, but also the development of abilities for analyzing professional activity, critically evaluating one's actions, and engaging in continuous self-development. This demand necessitates the systematic and well-structured integration of reflective competencies into the educational process.

The methodological system developed by the author is aimed at fostering reflective competencies in future physicians and encompasses complex psycho-pedagogical processes that evolve progressively. This methodology integrates independent analysis, practical training, emotional-intellectual approaches, and self-assessment skills within the process of professional formation. The structure of the methodology consists of four core components, implemented through a block of practice-oriented methods:

1. Critical evaluation of clinical activity through reflective analysis and self-observation;

2. Acquisition of experience close to real-life conditions through simulation-based learning methods;

3. Deepening the process of reflection through pedagogical and psychological approaches;

4. Conscious planning of one's professional trajectory through self-assessment and the development of reflective thinking.

First Component: Reflective Analysis and Self-Observation

This component is aimed at developing future physicians' competencies in critically analyzing their activities, identifying errors, and learning from them. Here, reflection is understood not merely as a form of "reporting," but as a metacognitive mechanism that regulates professional thinking. Correct understanding and conscious use of medical terminology are viewed

not only as indicators of knowledge, but also as tools that shape professional thinking and self-analytical abilities.

Research by Arnd-Caddigan, Averett, and Pozzuto demonstrates that the formation of students' personal epistemology is closely linked to the development of reflective thinking. The authors emphasize that students' ability to test, question, and critically analyze their own ideas within the learning process is a crucial factor in professional development. Within pedagogical and psychological frameworks, this approach is specified in the following directions:

-Analysis of complex medical and ethical situations through problem-based learning and evidence-based reasoning;

-Reflective examination of viewpoints through philosophical and psychological approaches (medical philosophy, bioethics, social hygiene);

-Development of metacognitive skills through monitoring, managing, and regulating the learning process ("learning to learn").

At this stage, tools such as reflective journals, video analysis, portfolios, and mentor feedback transform reflection into a consistent and controllable process.

Second Component: Simulation-Based Learning Methods

Simulation-based learning methods are used to prepare students for real clinical situations. Simulation-based education connects reflective thinking with practice: students experience situations, make decisions, identify errors, and plan subsequent actions. As a result, reflection does not remain at the level of theoretical explanation but is reinforced by practical experience.

L. Binding emphasizes that reflection enhances the capacity to understand others, particularly patients' emotional states, thereby strengthening empathetic approaches. In the educational process, simulation training creates favorable conditions for analyzing personal experience, engaging in professional reflection, and developing decision-making skills.

Third Component: Deepening Reflection through Pedagogical and Psychological Approaches

The third component serves to deepen reflection at the emotional-intellectual level. Reflection is linked to a physician's empathy, stress management, communication skills, and personal growth resources. Physicians are required not only to acquire knowledge but also to reassess their activities, adapt, and develop through professional reflection and critical thinking. From a pedagogical perspective, experimental learning, problem-based instruction, simulation/immersive methods, interactive learning, and reflective practice transform students into active subjects of the educational process. From a psychological perspective, the analysis of internal experiences, metacognition, emotional intelligence, and empathy expand the content of reflection. Banks, Clifton, Purdy, and Crawshaw demonstrate that reflective and control systems play a significant role in developing professional competence and emotional stability. Accordingly, the following applied mechanisms are proposed:

-Mentoring system: structured mentoring enables students to develop reflective analysis skills with the support of experienced mentors;

-Reflective supervision sessions: group-based analysis of problematic situations, difficulties, and solutions;

-Specialized training in professional reflection: teaching reflective methodology through simulation, role-playing, case analysis, and discussion.

Fourth Component: Self-Reflection and Professional Path Planning

The fourth component is designed to help students define their professional development trajectories. Structural analysis tables, individual development plans, and competence-based assessment systems are applied at this stage. B. Ballon and B. Skinner demonstrate the positive impact of reflective techniques on the professional growth of healthcare workers. This element is supported in the educational process through:

Writing reflective essays and journals (experience–emotion–conclusion–plan);

Reflective group discussions (peer assessment and feedback);

Psychological training focused on analyzing actions, emotions, decisions, and their consequences.

These four components are interconnected, integrating knowledge with practice and practice with reflection. As a result, the approach contributes to training

responsible, analytically minded specialists capable of independent decision-making. Below, the scientific foundations, structural components, and practical implementation mechanisms of this comprehensive approach are presented step by step.

Reflective Analysis and Self-Observation (Applied Mechanism)

The first stage of the methodology for developing reflective competencies aims to guide future physicians toward analyzing their activities, identifying errors, and drawing evidence-based conclusions for improvement.

This process enables students to observe themselves and critically evaluate their actions.

Practical implementation: students maintain brief records for each clinical (or simulated) decision, including patient interaction, diagnostic assumptions, evidence, chosen tactics, outcomes, and conclusions. Reflection extends beyond the question "What happened?" to include "Why did it happen?" and "What will change next time?" In addition, specific methods and guidelines are provided to organize self-assessment mechanisms. (Table 1)

Table 1. Methods and Guidelines for Self-Analysis

Method	Purpose	Effectiveness	Form of Application
Reflective Journal	To teach students to analyze daily activities and plan changes through reflective practice	Develops independent thinking and readiness for change among students	Weekly written assignments conducted after each class
Portfolio-Based Assessment	To document students' clinical practice outcomes and develop reflective evaluation skills	Forms a systematic self-assessment process and monitoring of professional growth	Throughout the semester: analysis of situations, events, and cases with a final reflective summary
Reflection Based on Video Analysis	To enable students to analyze their own behavior through external video recordings	Allows students to observe themselves from an external perspective and adjust their actions	After simulation sessions: reviewing video recordings followed by written analysis
Mentor-Based Reflection	To conduct reflective analysis and identify individual developmental trajectories with mentor support	Implemented through guidance and constructive feedback	Mentor–student discussions combined with written reflections
Reflection Using Guiding Questions	To guide, deepen, and structure students' thinking	Simplifies and systematizes the reflection process	Written responses to guiding questions at the end of a lesson or practical session

These methods encompass a variety of tools aimed at developing reflective capabilities. Now, each method is presented not in terms of a "redefinition," but with an organizational mechanism, assessment criteria, and implementation algorithm. A reflective journal fosters the habit of continuous self-assessment in students through regular review. Kember and colleagues propose indicators for evaluating reflective writings, which allow reflection to be observed in at least three levels:

Descriptive – the experience is narrated, but the analysis is minimal.

Analytical – cause and effect are explored, problems and questions are identified.

Critical/testing – the experience is compared to theory, and conclusions are turned into practical decisions.

In the portfolio assessment method, the student systematically organizes their academic and practical activities, collecting evidence of their professional growth dynamics. These include reflective writings (conclusions), results (graded works), clinical situation analyses, and mentor recommendations. Thus, this assessment tool serves as both an evaluation method and a "self-management map," in which the student creates their own portfolio. The steps to organize a portfolio for medical education include:

a) Explaining the goal and structure of the portfolio

b) Initiating initial reflective writings ("What did I learn?", "What challenges did I face?", "How can I improve?")

c) Regularly collecting materials

d) Interim feedback (with a mentor/tutor)

e) Final reflection and analysis of changes.

Table 2. Reflective Questions for the Portfolio

Question	Purpose
What kind of experiences did I gain during the clinical session?	Understanding experience
In which situations did I feel uncomfortable, and why?	Emotional reflection
How can I apply the knowledge I have learned in my future professional practice?	Transfer skills
What changes do I need to make in my future activities?	Readiness for change

Reflection based on video analysis enables students to view their own performance objectively: they identify subtle aspects of their communication, decision-making processes, and behaviors. L. Aronson emphasizes that video analysis is effective in teaching reflective skills, while J. Sargeant describes video analysis as a strong bridge between feedback and self-development. In this method, the "observation–analysis–planning" chain is clearly evident.

Mentor-based reflection deepens students' conclusions through interaction with a mentor. The mentor systematizes reflection, helps analyze ambiguity and emotions, and supports the formation of professional identity. L. Eby highlights the role of mentors in supporting reflective processes; J. Mezirow, within the framework of transformative learning, emphasizes the necessity of guided dialogue and questioning for reflection. In practice:

mentoring sessions are organized regularly;

the student prepares a reflective journal in advance;

the mentor guides analysis through questions;

as a result, a "future action plan" is formulated.

Reflection through guiding questions is a structured tool that moves reflection from "random thinking" to "systematic analysis." Boud, Keogh, and Walker emphasize that questions in reflective learning initiate and deepen thinking, while Brookfield refers to them as

catalysts that trigger reflection (Table 3).

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Mentor questions (examples):

1. What significant event occurred in your activity today?

2. What decision did you make in this situation, and why?

3. How did you feel in this situation, and how did those feelings influence your decision?

4. Are you satisfied with your decision, and what do you think should be changed?

5. How would you act in a similar situation next time?

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Table 3. Types of Guiding Questions

Category	Sample Questions
Recalling the Situation	What situations occurred during today's session?
Analysis	Why do you consider this situation or event important? What alternative actions could have been taken?
Evaluation	Which aspects satisfied you or caused concern? Why?
Lesson Learned	What conclusions did you draw from this experience?
Future Action	What changes would you like to make in your actions next time? Why?

When these methods are applied integratively, they increase the effectiveness of reflection: the journal + portfolio ensure continuous monitoring; video + mentoring provide objective analysis and feedback; guiding questions ensure analytical depth across all methods.

CONCLUSION

In conclusion, the systematic development of reflective competencies in the training of future physicians is one of the key strategic objectives of modern medical education. The four-component methodological system substantiated in this study expands students' opportunities to consciously analyze clinical practice, understand the cause–effect relationships of their

decisions, and plan their personal professional trajectories. Reflective journals, portfolio-based assessment, simulation-based training, and the mentoring approach transform reflection from an episodic activity into a mechanism of continuous development. As a result, the educational process creates a solid pedagogical and psychological foundation not only for the acquisition of knowledge and practical skills, but also for the formation of a responsible, critically thinking, empathetic physician capable of making independent decisions.

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